Old Whipple House Ipswich, Mass. (1670)

Monthly Review

Federal Reserve Bank of Boston

The New England CHEMICAL INDUSTRY

Manufacturers of chemical products in New England have developed one of the region's fastest growing industries, placing special emphasis on high quality items they have competed successfully.

Increased national dependence on foreign sources of raw materials, rapid emergence of new products, and greater use of lighter materials, particularly plastics, will nourish the future growth of the chemical industry in New England. Extensive opportunities still exist in New England for the establishment and growth of chemical firms specializing in products which originate in research laboratories.

Among the nation's major industries, the chemical industry has been the pace-setter in terms of growth during the last few decades. In 1950 and 1951, the industry spent eleven cents out of every dollar directed to the purchase of new plant and equipment by United States manufacturing firms. For the next four years the chemical industry has scheduled 13 per cent of the total planned outlays for expansion of manufacturing facilities. How is the New England chemical industry sharing in this growth? What is the past record, the present position, and the potential for future growth?

About 28,000 persons were directly employed by the "Chemical and Allied Products" industry in New England in 1950. On this basis, the industry is fifteenth in the listing of 19 major industry groups and accounts for two per cent of the region's manufacturing employment. However, the industry ranks twelfth in the area in terms of product value added by manufacturing. This achievement is a reflection of the high value of net manufactured product for each production worker in the region's chemical industry, an average of $10,780 in 1947. The all-industry average for New England was only $5,460. The record of the chemical industry was exceeded only by its close associate, the rubber industry. This high standing in terms of value added by manufacture is an indication of product selection based on research, and a partial explanation of why the chemical industry has grown in New England in spite of its distance from many basic raw materials.

New England's chemical industry is growing rapidly. Between 1939 and 1950 it expanded employment of production workers by 62 per cent, thus winning third place among New England's industries in terms of growth. Its relative expansion in capacity probably placed it even higher among the growth industries — the industry spent $17 million (six per cent of the region's total) for new equipment and $8 million (seven per cent of the region's total) for new plant in 1947.

Much of the national expansion in the chemical industry depended on exploitation of new resources, particularly oil and natural gas, in which New England did not share. As a consequence, the rate of expansion in New England probably should not be expected to match the nation's. Nevertheless, between 1939 and 1950 the 66 per cent expansion in production workers in the nation's chemical industry was only slightly greater than the 62 per cent increase in New England.

New England's growth in production of chemical products is testimony to the recent development that has occurred in new products and new processes — the specialty lines where New England can participate. The region's production is concentrated in product lines which are growing most rapidly in the nation. Sixteen out of 39 product lines in the nation more than tripled their value added by manufacture between 1939 and 1947. About 55 per cent of New England's chemical production workers identifiable by product line in the 1947 census were concentrated in those 16 fastest growing groups.

Manufacturers of chemical products in New England have concentrated their efforts on specialty products. Lacking local petroleum or coal resources, they have built their business on their ability to put out specialties

that could compete effectively in the local market. Local experience has helped them to enter the national market. For example, close ties and long experience with the paper and textile industries have supported their production of synthetic resins so that in 1947 they shipped more than 18 per cent of the nation's total in that category. Otherwise, they direct themselves primarily to sales within New England.

Each of five special products — pharmaceuticals, cleaning and polishing preparations, plastic materials, soaps, and glue and gelatin — accounts for more than six per cent of the region's output. As a group they account for 51 per cent of all production in New England's chemical industry. Another 15 per cent is scattered among miscellaneous chemical products. In effect, at least two thirds of the output of the New England chemical industry may be classified as specialty products, as distinct from basic chemicals.

A comprehensive measurement of the chemical industry in New England is statistically impossible because of the varying degrees to which chemical processes or products enter almost every manufacturing, construction, or other industrial activity. It is impractical to seek measurement of the importance of the chemical aspects of papermaking, leather tanning, textile finishing, and the other major New England industries.

Location Characteristics

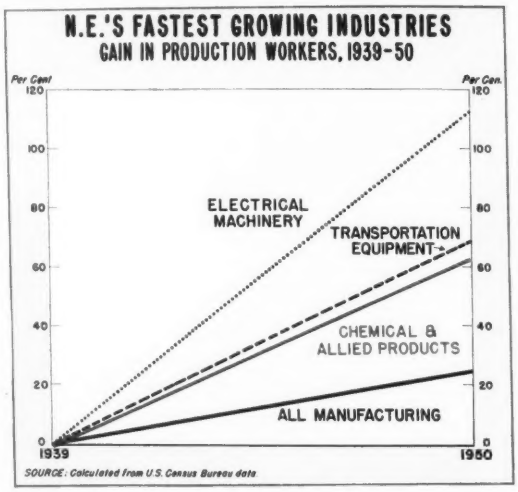
Manufacturers in New England's chemical industry may be grouped into three main product types:

The first group includes those products for which industry economics or technology dictate production close to markets, even if relatively high cost may be involved in transportation of raw materials. This group includes such products as sulphuric acid, fertilizer, manufactured gas, lime and cement, and paint and varnish. For products in this group the New England producer competes effectively within the six-state area, plus in some cases part of northern New York State and southeastern Canada. To the south and west competition is rather effectively blocked off by the concentration of chemical industries in the New York, New Jersey, Pennsylvania area.

The second group includes those products based on indigenous raw materials, such as sulphide, or on by-products from local industries, such as coal tar. Also included in this group should be those industries for which New England is strategically located as a transshipment and processing point for materials in transit from source to market.

A third group includes those products where "value added by manufacture" represents a high proportion of total value of shipments, and for which, therefore, producers have greater freedom from the source of raw materials in their selection of plant locations. Such products are plastics, drug and pharmaceutical products, soap and glycerin.

A large portion of New England's production is in the third product group. Each of the five products (mentioned above) which together account for more than half of New England's production would be classified in this "high-value-added-by-manufacture" group. Furthermore, this type of product seems to hold the most promise for future growth in the region.



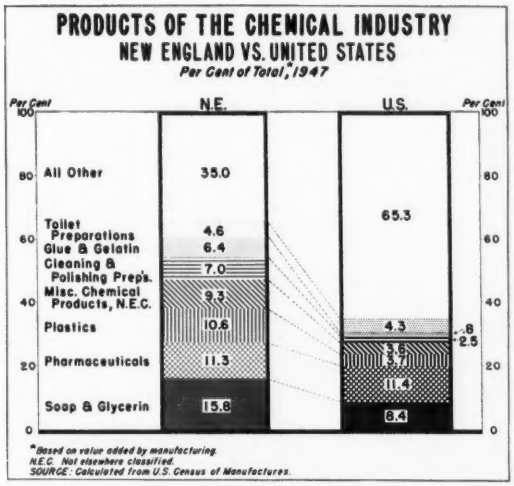
Proximity to markets has been the major orienting factor in developing the chemical industry in New England. Availability of qualified labor, plentiful and high-grade water, and port locations have been auxiliary aids in this development.

Approximately 48 per cent of the net output of the chemical industry is purchased by the industrial sector of the national market, according to the Bureau of Labor Statistics study of inter-industry flow of goods and services in 1947. About 20 per cent of the net output flows directly into the consumer market, about eight per cent is exported, and the remainder is used by service industries, by the Government, or by the industry itself.

It is difficult to estimate the extent of the industrial market for chemical products in New England. However, we do know that the eight largest industrial customers buy about 37 per cent of all the chemical industry's output, and New England has about 14 per cent of the workers employed by those eight largest industrial customers. We know also that about a third of the United States consumer market lies within 500 miles of Boston. It is apparent that easy shipment to eastern Canada and to overseas markets is an advantage for New England producers of chemicals.

The absence of basic chemical raw materials, the problem of transportation, and relatively high costs of fuel and power have fostered a process of natural selection in the development of New England's chemical industry. This conclusion is supported not only by statistical analysis but also by appraisals of location factors which New England chemical manufacturers have made, based on experience. A summary of their opinions is presented in an accompanying chart.

The favorable opinions New England manufacturers in the chemical industry have of their labor supply is in part a reflection of the level of labor costs in New England. New England producers appear to have a cost advantage resulting from relatively low wages in the region's chemical industry. The median rate of average hourly earnings in 1949 in New England was $1.35, only 89.4 per cent of the national median rate and only 83.3 per cent of the level in the Southwest. Only two regions,



Southeast and Mountain, had lower median rates than New England.

The adequacy of electric power was highly regarded by the reporting chemical manufacturers. This is a further indication that New England producers have refrained from attempts to produce chemical products requiring vast amounts of low-cost power. It is also a testimony to the fine quality of power service in New England where failures or shortages of fuel-generated power are unusual.

High transportation costs are a problem that New England producers must overcome by skill in adaptation of products and processes and by careful choice among alternate means of transport. The large volume of chemical products in New England's interregional trade is evidence of the success which the chemical industry has achieved in meeting the problem.

It is estimated that imports of chemicals and chemical products by rail and water totaled about 1.5 million short tons in 1950. In contrast, exports by rail and water totaled an estimated 203,000 short tons during the same year. The lack of balance reflects the use of water transport for bulk imports.

Trucking is very important as a means of transporting chemical products in New England's interregional trade. A survey[1] of the relative importance of trucking as a means of transporting commodities in New England's interregional trade in 1950 provides some guide in judging the movement of chemical products. One hundred and fifty estimates were collected from New England firms shipping or receiving chemical products that moved over regional boundaries. An average of the 1950 estimates indicates that about 46 per cent of the chemical product tonnage in New England's interregional trade was shipped by truck in 1950. More than two-thirds of the respondents in each of the following commodity classes reported that they move more than one-half of those commodities by truck: Plastics, drugs, medicines, toilet preparations, synthetic fiber and yarns, soybean oil, alcohol, n.o.s., and chemicals, n.o.s.

Chemical products were about 8.0 per cent of all railway shipments of manufactured products into New England in 1950. In contrast, only an estimated 2.7 per cent of all outbound railway shipments were chemical products in the same year. This ratio of three to one which prevails between rail imports and exports is a reflection of the consumption of chemical products by agriculture, industry, and consumers within the region. It also probably points to the use of trucking to ship finished specialty products made from bulky shipments brought in by rail and water.

About half of all New England's rail freight trade in chemical products is with the Middle Atlantic region. About 53 per cent of all chemical shipments into New England originate in the Middle Atlantic region and about 47 per cent of all New England exports are destined for that region. A substantial portion of the region's trade by rail is with the East North Central region, but every part of the United States ships or receives chemical products in trade with New England.

New England producers rely heavily on import of chemical products by water. This is particularly true

[1] See *Monthly Review*, January, 1952.

CHEMICALS AND CHEMICAL PRODUCTS IN NEW ENGLAND'S WATER COMMERCE — 1950
(in short tons)

Commodity	Foreign			Domestic		
	Receipts	Shipments	Net (+) = Receipts (−) = Shipments	Receipts	Shipments	Net (+) = Receipts (−) = Shipments
Synthetic Rubbers	—	64	− 64	—	—	—
Naval Stores, Etc.	1,833	152	+ 1,681	503	437	+ 66
Drugs, Herbs, Etc.	60	21	+ 39	—	—	—
Vegetable Oils & Fats, Inedible	10,868	330	+ 10,538	1,132	62	+ 1,070
Vegetable Dyeing & Tanning Materials	16,708	109	+ 16,599	—	—	—
Sulfur	—	—	—	141,948	—	+141,948
Coal Tar Products	10,217	197	+ 10,020	128,978	37,935	+ 91,043
Medicinal & Pharm. Prep's.	29	56	− 27	—	469	− 469
Industrial Chemicals, Excl. Sulfuric Acid	8,607	1,663	+ 6,944	68,076	10,547	+ 57,529
Pigments, Paints, Etc.	568	173	+ 395	917	1,465	− 548
Other Chemical Specialties	—	3,554	− 3,554	48	2,846	− 2,798
Nitrogenous Fertilizers & Fertilizer Materials	2,985	3	+ 2,982	7,337	3,563	+ 3,774
Phosphate Fertilizer Mat's	362	2,661	− 2,299	102,871	1,822	+101,049
Potash Fertilizer Mat's	13,626	—	+ 13,626	—	—	—
Fertilizers & Fertilizer Materials, n.e.c.	1,628	1,839	− 211	22,004	6,110	+ 15,894
Miscellaneous Chemical Products	29	76	− 47	875	5,689	− 4,814
Special Category	—	71	− 71	—	—	—
Grand Totals	**67,520**	**10,969**	**+ 56,551**	**474,689**	**70,945**	**+403,744**

Source: Annual Report (preliminary), 1951, Chief of Engineers, U. S. Army.
Figures are for 13 largest harbors and 17 commodity groups only.

of the fertilizer industry and those firms using the basic industrial chemicals. An accompanying table which displays the commodities moving in New England's water commerce in 1950 shows that about a third of all shipments to foreign countries were specialty products.

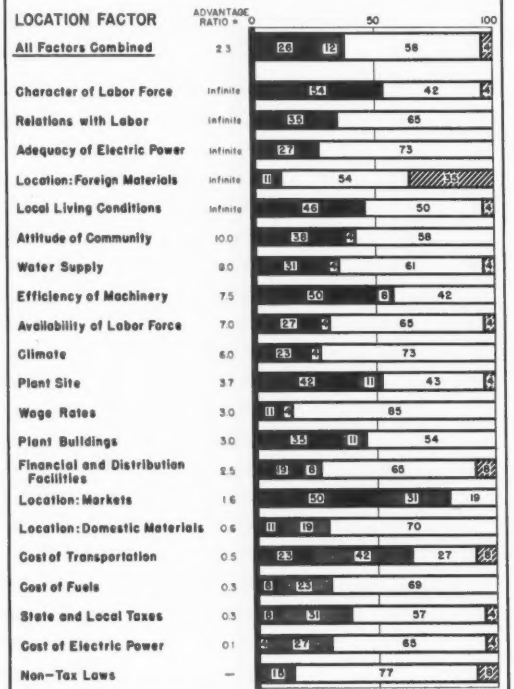
Several basic developments in competitive relationships provide optimistic signs for the future of the chemical industry in New England.

As cheap domestic sources of certain basic raw materials tend to become depleted, there is likely to be an increased reliance on water-borne imports of these materials. In some cases this may shift centers of production from interior points to locations along the seaboard. While New England is only one of several potential beneficiaries of such a shift, its competitive prospects would certainly be enhanced.

Our modern chemical age is witnessing the emergence of new products at a constantly accelerating rate, for example, antibiotics. Many of the new products are being produced in New England, and more may be produced. Furthermore, the growing and research-based nature of the industry facilitates selection of new sites independent of earlier locations. The trend toward increased diversification and specialization would appear to offer favorable possibilities in New England for production of high quality specialty items.

HOW 26 FIRMS IN N.E.'S CHEMICAL INDUSTRY APPRAISE THEIR LOCATIONS

Percentages of Companies Reporting Factor as Important Advantage ■ Important Disadvantage ■ Of Little Importance □ No Answer ▨


LOCATION FACTOR
ADVANTAGE RATIO *
0
50
100
All Factors Combined 2.3 26 12 58 4
Character of Labor Force infinite 54 42 4
Relations with Labor infinite 35 65
Adequacy of Electric Power infinite 27 73
Location: Foreign Materials infinite 11 54 35
Local Living Conditions infinite 46 50 4
Attitude of Community 10.0 38 4 58
Water Supply 9.0 31 4 61 4
Efficiency of Machinery 7.5 50 8 42
Availability of Labor Force 7.0 27 4 65 4
Climate 6.0 23 4 73
Plant Site 3.7 42 11 43 4
Wage Rates 3.0 11 4 85
Plant Buildings 3.0 35 11 54
Financial and Distribution Facilities 2.5 31 8 58 3
Location: Markets 1.6 50 31 19
Location: Domestic Materials 0.6 11 19 70
Cost of Transportation 0.5 23 42 27 8
Cost of Fuels 0.3 4 23 69
State and Local Taxes 0.3 8 31 57 4
Cost of Electric Power 0.1 4 27 65 4
Non-Tax Laws — 15 77 8

* Ratio of Advantages to Disadvantages among those firms considering the Location Factor to be important. High ratings are favorable to New England.
SOURCE: Survey reported by the Federal Reserve Bank of Boston in the Monthly Review – July, August and September, 1949.

The trend toward use of lighter materials, particularly plastics, to replace steel and other heavy metals operates to offset New England's lack of basic metallic ores. New England has a fine start in the production of plastics. Increased use of plastics will improve the region's competitive position in the important field of basic materials.

Signs of the Future

Chemists and manufacturers have recently identified several lines of chemical investigation which have potentialities for further development over the next few decades, such as petro-chemicals, silicones, fluoro-chemicals, pharmaceuticals (especially antibiotics), man-made fibers, and plastic materials. All of these fields would seem to offer New England a wide range of opportunities, not for the production of the basic materials, but for the manufacture of diversified end-products from intermediate supplies imported from other sections of the country.

Growth in the chemical industries is largely dependent on invention. This is dramatically illustrated by two of the leading concerns in the field. E. I. duPont de Nemours and Company reports that 60 per cent of its current revenues come from products which were unknown a short generation ago. Yet duPont has one of the oldest business histories in the United States. Charles Pfizer and Company, a leader in the pharmaceutical industry, reported that 60 per cent of its 1950 sales volume represented products which were not commercially available ten years ago. In the year 1950 alone, Pfizer added 19 new products to its line.

It is interesting to raise the question as to whether New England may not find its logical future position in the chemical industry to be that of an incubator for new, specialized and diversified chemical firms. For such a position, New England can be rated as having these five important advantages:

1. Close proximity to major consuming markets, which facilitates the process of coordinating production specifications with market requirements.
2. Close proximity to unexcelled facilities and personnel for basic research, in the form of universities, medical centers, and industrial research laboratories.
3. Ready availability of relatively inexpensive, intelligent labor, with great diversification of skills and ability to perform careful control tasks.
4. Local availability of large aggregations of capital funds and skilled financial management.
5. General availability of adequate supplies of pure, soft water and clean air, both important for industries requiring precise control.

The catalyst required for successful exploitation of these resources is skilled, up-to-date management. This resource is mobile, and not confined to any area. New England should be able to compete for it effectively by reason of its advantages as a place to live.

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Monthly Review
FEDERAL RESERVE BANK OF BOSTON

REVIEW OF THE FIRST QUARTER:

UPS and DOWNS in New England

BUSINESS TRENDS in New England during the first quarter reflected counterbalancing developments which appeared a year ago. Expansion in the aircraft and metalworking plants in Connecticut contrasted with concentrations of unemployment in textile centers. High levels of individual incomes, a tight labor market, extensive business plans for expansion and extensive orders in a growing defense program formed a pattern of prosperous expansion in some areas. But pools of unemployed workers, slackening in manufacturers' orders, and spotty defense expenditures were causes for apprehension and business uncertainty in other regions of New England.

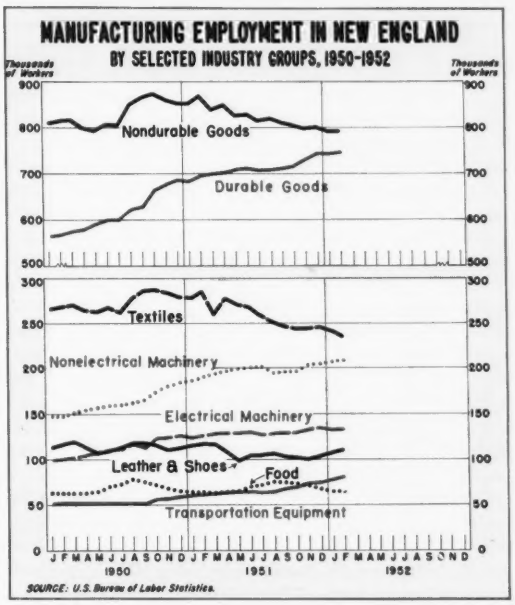
Consumers have played a key role in determining business trends. Part of the present uncertainty may be traced directly to individual decisions to save rather than to spend. Throughout the nation, individuals decided to save a larger portion than expected of their income after taxes during 1951. The early months of 1952 indicate that they have not changed their plans.

In New England the increase in liquid savings in the early months of 1952 was slightly less than it had been in the latter part of 1951. Mutual savings banks deposits continued their strong upward trend, but liquid savings held in federal savings and loan accounts, commercial bank time deposits, life insurance and government bonds increased only moderately. This slowdown in the rate at which liquid savings accumulated may be a partial reflection of smaller paychecks resulting from reduced workweeks in some consumer goods plants, especially in textiles, and transition unemployment in other plants shifting to defense production.

Dollar sales at New England department stores during the first quarter were 11 per cent lower in 1952 than in 1951. But the later date of Easter this year and the buying splurge a year ago have clouded the significance of a calendar year percentage comparison. In terms of the 4-week shopping period just prior to Easter, sales were 14 per cent higher this year than those last year in southern New England department stores.

The trend of buying has emphasized consumer awareness of prices and a search for bargains. At individual stores special promotions have stimulated buying in excess of corresponding weekly levels a year ago. Even in areas with high unemployment, consumers have recognized outstanding attractions, an indication of basic buying strength during a quarterly period of high tax payments and saving.

Durable consumer goods sales lagged behind those of a year ago in the first quarter. Major household appliance sales failed to reach their year-ago levels by 45 to 55 per cent during most of the quarter. Automobile sales in Massachusetts, according to registration data, fell behind those last year by about 37 per cent through March. However, year-to-year sales of women's and misses' apparel declined by only one per cent in Downtown Boston stores during February and March.


MANUFACTURING EMPLOYMENT IN NEW ENGLAND
BY SELECTED INDUSTRY GROUPS, 1950-1952
Thousands of Workers
Nondurable Goods
Durable Goods
Textiles
Nonelectrical Machinery
Electrical Machinery
Leather & Shoes
Food
Transportation Equipment
J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D
1950
1951
1952
SOURCE: U.S. Bureau of Labor Statistics.

The volume of new orders placed with the region's manufacturers drifted downward during the first quarter of 1952, as firms in both the metalworking and soft-goods lines received fewer orders than a year ago. The combined index of orders of the Associated Industries of Massachusetts declined slightly in February to an average level for the first two months about ten per cent lower than a year ago. During early 1952 electrical machinery was the only component which registered a substantial gain in orders.

As new orders thinned out, so did inventories. Reports of the New England Purchasing Agents Association revealed a trend toward lower raw-material, work-in-process, and finished-goods inventories among its members during the first quarter. The drop-off in both new orders and inventories became even more general during March.

Nonsecret defense contracting in New England during the first three months of 1952 was only a third as high as the peak level reached during the April-June period of 1951. A slight increase in total volume over the level reached in the last quarter of 1951 was not sufficient to offset the slowdown in production of civilian goods. Textile manufacturers received about 25 per cent of nonsecret defense contracts during the quarter in comparison with their 36 per cent share in the 18 months ending December 1951. On the other hand,

transportation equipment manufacturers, primarily the aircraft producers in Connecticut, received about a third of the dollar volume of nonsecret defense contracts during the first quarter 1952 in contrast to their 25 per cent share in the previous 18 months.

Price changes during the quarter reflected consumer buying resistance and accumulations of inventories. Consumer prices, according to the Boston index, reversed their recent gradual rise and turned slightly downward in February. Wholesale and basic commodity prices continued to decline during the quarter.

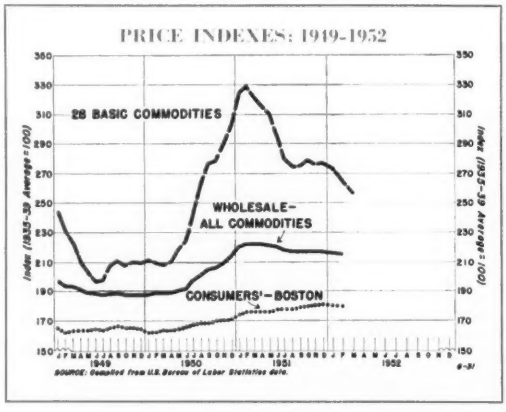
Production and employment dropped off slightly in New England during the first quarter of 1952. Steel production, freight carloadings, and bank debits slipped back from their positions in the last quarter of 1951 and stood below year-ago levels.

Total nonagricultural employment declined in February. Nonmanufacturing lines contributed to the drop as the usual season reductions occurred in construction, retail trade, and postal employment.

Manufacturing employment increased by 4,000 workers from January to February but was still 2.5 per cent below employment in February 1951. In the nondurable-goods industries an expansion of employment in the shoe and apparel industries offset a further drop in textile employment and held the total constant. An expansion in durable-goods manufacturing employment occurred principally because of strength in the electrical machinery and transportation equipment industries.

Unemployment in New England is concentrated in centers dependent on textile manufacturing. At the low point in the 1949 business recession (June), insured unemployment in New England covered 305,256 jobless persons, and 14.4 per cent were in four textile cities in Massachusetts — Lawrence, Lowell, New Bedford and Fall River. In the week ending April 4, 1952, insured unemployment in New England stood at 111,872, but 17.6 per cent of it was concentrated in the same four cities. In 1950 these textile cities accounted for only 8.5 per cent of the region's population.

The value of construction contracts awarded in New England between January 1 and March 15 was almost 25 per cent below contracts awarded in the like period of 1951. Awards for public utilities construction registered the greatest drop, followed in order by nonresidential, public works, and residential construction.



New one- and two-family dwellings will be smaller and less expensive in 1952 than in 1951. However, data for January and February indicate no substantial difference between early 1951 and early 1952 in the number of dwelling units to be built.

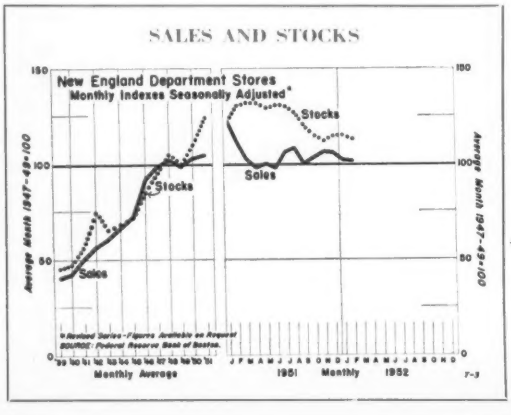
Contract awards disclose a downswing, possibly temporary, in construction of apartment buildings and public housing. It is estimated that nearly 6,000 new dwelling units will be needed in New England's nine critical defense housing areas.

New England industry continues to account for only about 2.5 per cent of the nation's proposed plant and equipment expenditures (excluding the proposed steel mill) under the certificate of necessity program which grants accelerated depreciation advantages. During the month ending March 7, the proportion rose to three per cent, but more than half of the proposed investment was for transportation, electric power, and oil storage facilities.

Total business loans at New England member banks showed only a slight tendency to rise during the first quarter of 1952. Both in Boston and at banks outside the city, business loans averaged close to the level reported during the fourth quarter of 1951 and failed to show the usual seasonal decline. These loans continue to reflect an approximate balance of over-all business activity at a generally high level.

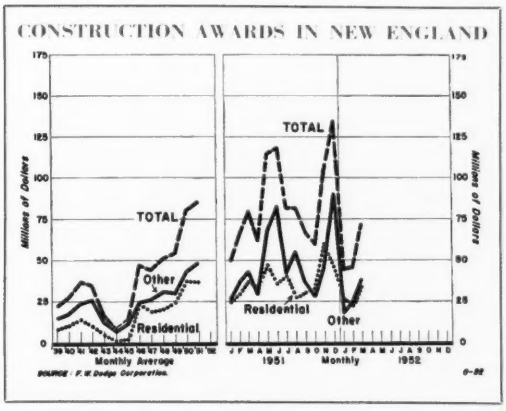
Defense- and defense-related businesses like metal and metal-products and public utilities continued to support the loan demand during the quarter. Some net borrowing was also undertaken by sales finance companies and other business not related to defense.

Textile, apparel and leather manufacturers, food, liquor and tobacco processors, and retail and wholesale trade generally made net repayments of business loans during the quarter. In contrast, each of those groups of borrowers increased their bank loans considerably a year ago.



Durable-Goods Industries

Expansion in the durable-goods industries during the first quarter originated in defense contracts for airplanes, ships, and electrical machinery. Most of the remaining durable-goods industries remained steady at



high levels in the early months of 1952.

Production in the **nonelectrical machinery** industry held close to peak levels during the early months of 1952. Employment was about nine per cent higher than the level of a year ago. In Massachusetts, orders for machinery continued to run ahead of those a year ago by a margin of about eight per cent. The extension of scheduling in the armament program has resulted in some cancellations of orders and machine tool backlogs have declined somewhat, although not enough as yet to affect production schedules. Subcontracting work for defense contractors kept an increasing number of firms busy, and helped to offset curtailed production schedules for nondefense products.

Developments in the **electrical machinery** industry during the first quarter were somewhat mixed, but on an over-all basis the industry continued to grow. Plants engaged primarily on civilian products were hampered by material shortages, while some of those engaged in defense work were held back by personnel shortages and resorted to intensified recruitment over a wide geographic area. For the three months ending March 1, average employment in the New England electrical machinery industry was seven per cent above employment a year ago; new orders for electrical products received by Massachusetts firms were six per cent higher.

Government plants, which constitute the bulk of the **ordnance industry,** continued to expand during the early months of 1952. In contrast, private ordnance plants in New Haven and Worcester found that their defense orders were nearing completion, and had to reduce their staffs. Private ordnance plants dropped about 1,200 workers in the three months ending March 1, 1952.

Activity in New England's **primary metal industries** declined in the early months of 1952. Iron and steel foundries have been feeling the effects of the stretch-out in the Government's defense program as well as the curtailment of textile machinery schedules. In recent weeks, also, machine tool firms have been trimming their orders in line with a lessening of the pressure on them. Layoffs at some ferrous foundries have reflected both readjustments. Most nonferrous foundries, however, were very busy.

Two of New England's open-hearth steel furnaces closed temporarily during the last week in March, principally because of a slump in the demand for wire-mill products. During the first quarter of 1952, New England steel mills operated at an average rate of 83.6 per cent of capacity, four per cent below the corresponding average for a year ago.

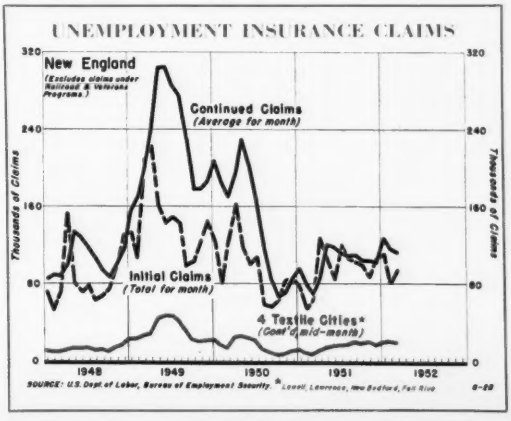
Employment in the brass industry in Waterbury, Connecticut, has been sliding off since December and at mid-February was seven per cent lower than a year ago. A majority of the mills were operating on a four-day workweek. High inventories of civilian products, shortages of metals and the failure of expected government orders to materialize were reasons given for slowness in the first quarter.

Activity among the manufacturers of **fabricated metal products,** such as hardware, plumbing supplies, metal stampings and wire products dropped slightly in February but remained substantially above the levels of 1951. Average employment in the industry for the first two months of 1952 was 3.4 per cent above the employment level of the last quarter of 1951. Lack of material was apparently not an important factor in determining the level of employment.

Defense contracts awarded to aircraft and boat building firms in the **transportation equipment** industry have made it the fastest growing industry in New England. Employment at mid-February was 32 per cent above its level a year ago. Connecticut, with its large aircraft and submarine-building facilities, has secured the lion's share of this business among the New England states and employs 60 per cent of New England's transportation equipment workers. In Massachusetts, shipbuilding employment has been increasing at all important yards and it will expand sharply during the next few months.

Textile machinery manufacturers and suppliers have felt a chill coming from economy-minded textile mills. Gaps in domestic orders and deliveries, and a falling off in export trade, have forced several plants to cut back hours of work. Firms have taken an increased volume of subcontracts for machine tools and armaments, but extension of delivery dates and cancellations have disturbed their plans for taking up the slack caused by slowness in their regular lines.

The **lumber business** in New England was seasonal-



ly dull during the first quarter of 1952. In expectation of lower prices, dealers bought only for immediate turnover. Because of unfavorable weather, however, production and shipments were actually reduced. Combined with expectation of defense business, this limitation on available supplies strengthened the market and prices remained firm at or somewhat below legal ceilings. The firming of the Canadian dollar has added to the cost of spruce and hardwood lumber shipped from the eastern provinces.

Overtime schedules were common during the first quarter of 1952 among New England manufacturers of solid wood **furniture.** One large manufacturer's business ran ahead of year-ago levels. Producers expect the 1952 total to exceed that of 1951. The Boston furniture show produced new business satisfactory to most exhibitors. Prices are firm and producers see no need for conversion to lower-priced lines.

Nondurable-Goods Industries

Seasonal expansion in the shoe and apparel industries offset a continued drop in textile industry employment among the nondurable-goods industries in early 1952. Improved price, raw material, and inventory situations have set the stage for improvements in most lines of nondurable-goods production.

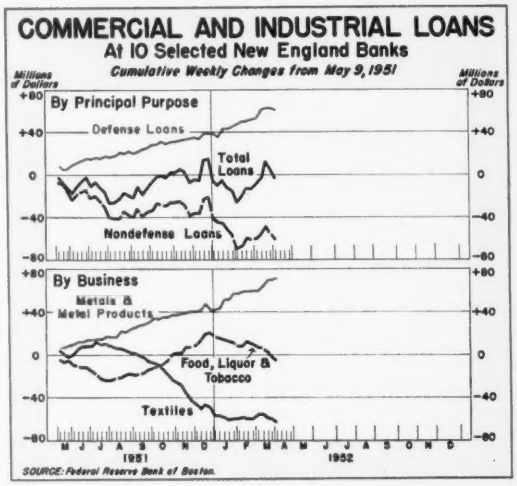
The New England **textile industries,** with only a few exceptions, waited for an upturn in demand during the first quarter of 1952. Meanwhile, union-management negotiators worked to reconcile differences of opinion. Fortunately, work stoppages did not interrupt output during an uncertain market situation conditioned by accumulated inventories and declining raw material prices. The urgency to correct basic weaknesses in the New England division of the industry became more acute as competition for markets grew more intense. The foresight of firms which had stressed diversity, flexible machinery, research and merchandising began to pay off.

Some woolen mills benefited from a fillip in orders, but the woolen and worsted industry generally suffered from a lack of civilian orders and some mills faced more serious problems on the completion of their current government contracts.

Many mills in the cotton and rayon division operated on curtailed schedules and several closed completely. Management representatives sought ways and means to obtain a larger volume of government contracts to keep their mills in production.

New England **garment plants** experienced the usual seasonal upswing in activity during the quarter as production of spring and summer merchandise reached its peak. Manufacturers of women's dresses and sportswear and boys' clothing have been very busy. Orders in some sections of the men's-wear industry, however, did not come up to expectations.

By mid-March most New England **shoe plants** were operating at their seasonal peak. As production on spring runs got under way, work forces were expanded and hours were lengthened. However, employment in February was still seven per cent below the level of a year ago. Plants making juvenile shoes and women's inexpensive footwear have been extremely active. While the demand for men's shoes was good, by the end of the month some plants were curtailing operations because reorders did not come up to expectations. Prices were down slightly from their level of a year ago, reflecting at least in part the decline in hide and leather prices. Inventories were reported to be in a healthier condition than last year as a result of the severe production cutback in late 1951. Tannery operations continued to reflect the sluggish demand for leather.



During the quarter, operations of New England **jewelry** shops expanded seasonally, but at nothing like the pace of a year ago when manufacturers were trying to turn as much brass as possible into semi-finished items before restrictions on use of the metal became effective. The industry's concern over availability of metal has been relieved somewhat by an increase in the copper allocation for 1952 and by the effective use of substitute metals.

The competitive tone of the **paper and paper products** market during the quarter emphasized the need for stepped-up selling effort. Some mills, which maintained overtime schedules last year, ran merely at full time. Demand for fine papers remained strong. Bookpaper manufacturers raised their prices in March. Wood pulp supplies became more plentiful and Scandinavian products announced substantial price cuts for second-quarter contracts. Canadian mills made concessions on delivery costs.

The seasonal slowdown has reduced activity somewhat in **printing and publishing** establishments since the last quarter of 1952. Short time is reported for some areas and many of the region's greeting card plants have reduced their staffs.

Employment in the New England **chemical** industry during the past 12 months has fluctuated within a very narrow range with only minor month-to-month changes. Some Rhode Island chemical plants have been enlarging their research laboratories and developing new products to take the place of slow-moving items, such as textile chemicals. Entrance into other fields and the adaptation of typical textile chemicals to meet government specifications on uniform cloth and other material have done much to keep this industry on an even keel.